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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,056	04/03/2002	Arno Lange	220950USOPCI	6861

22850 7590 03/29/2005

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ALEXANDRIA, VA 22314

EXAMINER
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TOOMER, CEPHIA D

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/089,056	LANGE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Cephia D. Toomer	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12-14 and 16-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-10, 12-14 and 16-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/02/01/03/01/05</u> . | 6) <input type="checkbox"/> Other: ____  |

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## **DETAILED ACTION**

### ***Specification***

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-9, 12-14 and 16-23 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 5, 7-10, 12-14, 16-19 of copending Application No. 10/089,064. Although the conflicting claims are not identical, they are not patentably distinct from each other because the amine of the present invention may be an amine which has at least one primary amino function and at least one secondary amino function which encompasses the amine of 10/089,064.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 8-10, 12, 13, 16, 17 and 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Colucci (US 5,634,951).

Colucci teaches a detergent/dispersant for use in spark ignition fuels wherein the dispersant is the reaction product of a phenolic compound alkylated with a highly reactive polyisobutene (PIB) with an aldehyde and an amine (see abstract; col. 2, line 64-67; col. 3, lines 1-10). The PIB has a number average molecular weight of from 500 to about 3000 and a polydispersity in the range of 1-4 (see col. 3, lines 11-21).

The amine is preferably an aliphatic diamine having one primary or secondary amino group such as a N,N-dimethyl-1,3-propanediamine (aka 3-(dimethylamino)-n-propylamine)(see col. 3, lines 61-67; col. 4, lines 25-26). The aldehyde may be formaldehyde (see col. 4, lines 37-47).

Colucci does not specifically set forth the adduct mixture of claims 3 and 10 or that the adduct mixture contains 1-15 mol% of unreacted PIB-phenols (claim 19). However, the mixture of Colucci would inherently meet these limitations because Colucci teaches the same reactants as Applicant.

Accordingly, Colucci teaching all the limitations of the claims anticipates the claims.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5, 8-10, 12-13, 16-17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moreton (US 5,876,468).

Moreton teaches a fuel composition comprising a Mannich reaction product of a polyisobutene-substituted phenol wherein at least 70% of the terminal olefinic double bonds in the polyisobutene (PIB) are of the vinylidene type; an aldehyde; and an ethylene diamine (see abstract). The PIBs are the highly reactive type (see col. 1, lines 56-67) and have a number average molecular weight of from 700-2300. The aldehyde is preferably formaldehyde (see col. 2, lines 1-4). The additive is present in the fuel in amount from 20 to 1000 ppm or in a concentrate in an amount from 5-30% by weight (see col. 2, lines 57-61; col. 2, lines 16-21). The fuel is gasoline (see col. 2, lines 30-32). The fuel composition contains conventional fuel additives (see col. 1-13). In comparative Example 3, Moreton teaches the preparation of an adduct of PIB-substituted phenol and dimethylaminopropylamine (one of the amines recited in instant

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claim 3). Moreton teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Moreton differs from the claims in that he does not specifically teach the polydispersity of the PIB (claims 1 and 4). However, no unobviousness is seen in this difference because the PIBs of Moreton are of the highly reactive type known to have the claimed polydispersity and the PIBS possess the claimed number average molecular weight. Therefore, it would be reasonable to expect that the PIBs of Moreton meets this limitation.

In the second aspect, Moreton differs from the claims in that he does not specifically teach the adduct mixture of claims 3 and 10. However, no unobviousness is seen in this difference because Moreton teaches a PIB-substituted phenol that appears to meet the claimed limitations and he teaches the same amine and aldehyde reactants. He reacts them in the same manner as Applicant. Therefore, it would be reasonable to expect that the adducts of claim 3 would be within the scope of Moreton, absent evidence to the contrary.

7. Claims 1-5, 8-10, 12, 14, 16 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Worrel (US 3,413,347) in view of Cherpeck (US 5,300,701) further in view of Baxter (US 6,562,913).

Worrel teaches Mannich reaction products of high molecular weight wherein the products are obtained by reacting a high molecular weight alkylphenol, aldehyde and N,N-dialkyldiamine (see abstract). The alkyl group of the phenol has an average molecular weight of from 550-1400 and is preferably polybutene, which suggest

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polyisobutene. The aldehyde is preferably formaldehyde and the amine may be N,N-dimethyl-1,3-propanediamine (see col. 1, lines 59-71; col. 3, lines 6-25; col. 4, lines 1-17; Examples). The adduct product is added to lubricating oils in an amount from 0.01 to about 10 wt % (see col. 6, lines 52-58). Worrel teaches the limitations of the claims other than differences that are discussed below.

In first aspect, Worrel differs from the claims in that he does not specifically teach that alkyl group is highly reactive PIB having a polydispersity of less than 3.0. However, Cherpeck and Baxter teach this difference.

Cherpeck teaches a process for the preparation of PIB substituted phenolic compound wherein the phenolic compound is alkylated in the presence of an acid catalyst (see abstract). The PIB has a number average molecular weight of 300-500 and contains at least about 70% methylvinylidene (high reactive) (see col. 2, lines 37-49). Cherpeck teaches that these PIB compounds are the commercial product ULTRAVIS-10 (molecular weight 950) (see Example 1).

Baxter teaches that highly reactive PIB such as ULTRAVIS possess a polydispersity of no more than 2.0 (see col. 4, lines 12-29, 54-58).

It would have been obvious to one of ordinary skill in the art to have replaced the polybutene of Worrel with a highly reactive polybutene because Cherpeck teaches that employing such a polybutene provides the desired PIB-phenol in significantly higher yield than employing conventional PIB having minor amounts of methylvinylidene and phenols exhibit minimal molecular weight degradation (see col. 4, lines 19-57).

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In the second aspect, Worrel differs from the claims in that he does not specifically teach the adduct mixture of claims 3 and 10. However, no unobviousness is seen in this difference because Worrel, Cherpeck and Baxter teach a PIB-substituted phenol that appears to meet the claimed limitations and they teach the same amine and aldehyde reactants. Worrel reacts them in the same manner as Applicant. Therefore, it would be reasonable to expect that the adducts of claim 3 would be within the scope of Worrel, Cherpeck and Baxter, absent evidence to the contrary.

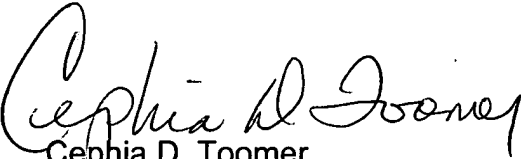
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Cephia D. Toomer  
Primary Examiner  
Art Unit 1714

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